

Amendments to the Claims:

Claim 1 (Currently amended): An organic semiconductor device, comprising:
a bipolar organic semiconductor layer in which electrons and holes are movable;
a hole giving/receiving electrode for giving/receiving holes to/from the organic semiconductor layer;

an electron giving/receiving electrode, spaced a predetermined distance from the hole giving/receiving electrode, for giving/receiving electrons to/from the organic semiconductor layer;

a hole-side gate electrode, arranged opposing [[to]] a region of the organic semiconductor layer near the hole giving/receiving electrode with an insulating layer sandwiched, for controlling distribution of holes in the organic semiconductor layer; and

an electron-side gate electrode, arranged opposing [[to]] a region of the organic semiconductor layer near the electron giving/receiving electrode with an insulating layer sandwiched, for controlling distribution of electrons in the organic semiconductor layer,

wherein

the organic semiconductor layer is an organic semiconductor photo-sensitive layer that generates pairs of electrons and holes through external irradiation of light.

Claim 2 (Original): The organic semiconductor device according to Claim 1, wherein the organic semiconductor layer is formed of a bipolar organic semiconductor material.

Claim 3 (Original): The organic semiconductor device according to Claim 1, wherein the organic semiconductor layer includes a laminated structural film with an N-type organic semiconductor layer and a P-type organic semiconductor layer laminated with each other.

Claim 4 (Original): The organic semiconductor device according to Claim 1, wherein the organic semiconductor layer has a junction film structure including an N-type organic semiconductor layer and a P-type organic semiconductor layer having a junction portion between the hole giving/receiving electrode layer and the electron giving/receiving electrode layer.

Claim 5 (Original): The organic semiconductor device according to Claim 1, wherein the organic semiconductor layer is formed of a mixture of an N-type organic semiconductor material and a P-type organic semiconductor material.

Claim 6 – 10 (Cancelled)

Claim 11 (Currently amended): An imager comprising a plurality of the organic semiconductor devices according to ~~Claim 10~~ Claim 1 arranged on a substrate.

Claim 12 - 20 (Cancelled)